

Power Business Line - Capital

Funding Schedule by Activity

(Accrued Expenditures)

	(dollars in thousands)				
	FY 2004	FY 2005	FY 2006	\$ Change	% Change
Associated Project Costs	111,319	131,158	119,400	-11,758	-9.0%
Fish & Wildlife	8,514	36,000	36,000	0	0.0%
Conservation & Energy Efficiency . . .	16,973	32,500	29,000	-3,500	-10.8%
Total, Power Business Line - Capital .	136,806	199,658	184,400	-15,258	-7.6%

Description

Associated Project Costs provide for direct funding of additions, improvements and replacements of existing Bureau, and Corps hydroelectric projects in the Pacific Northwest. The Bureau and Corps provide power production, which is marketed by Bonneville, and invest in additions, improvements, and replacements that provide for increased performance and availability of generating units.

Maintaining the availability and increasing the efficiency of the FCRPS is critical to ensuring that the region has an adequate, reliable and low-cost power system. The FCRPS represents about 80 percent of Bonneville's power supply, and is composed of 31 operating Federal hydro electric projects with over 200 generating units. These projects have an average age of over 45 years, with some that exceed 60 years of age. Through direct funding and the close cooperation of the Corps and Bureau, Bonneville uses its borrowing authority to make investments needed to restore generation availability and improve efficiency, eliminating demand on Corps and Bureau appropriations for power-related investments. Since the beginning of direct funding, Bonneville has significantly improved system performance. In 1999, at the direction of Congress, Bonneville issued a report that it soon began to implement called the "Asset Management Strategy for the FCRPS." Bonneville concluded in this report that it needed to invest nearly \$1 billion in the projects over the next 12-15 years. Without these investments that are focused on restoring and maintaining the reliability of the system history indicates that unit availability may initially decline at a rate of about 1.5 percent per year. Supplementary analyses and experience with the system have revealed additional investment needs above and beyond the levels originally planned under the Asset Management Strategy for this and the next several rate periods.

These planned investments, included in this FY 2006 budget funding estimates, will maintain the output of the FCRPS. Moving forward with these cost-effective opportunities to expand the generation and to preserve and enhance the capability of the

Federal system is a smart economic and environmental decision when compared to purchasing power from the market to serve Pacific Northwest electricity needs.

The Fish and Wildlife program provides for the protection, enhancement and mitigation of Columbia River Basin fish and wildlife due to losses attributed to the development and operation of hydroelectric projects on the Columbia River and its tributaries, pursuant to Section 4(h) of the Northwest Power Act. Bonneville satisfies a major portion of its fish and wildlife responsibilities and meets the Administrator's obligation under the Council's Fish and Wildlife Program.

Bonneville is also mandated to implement measures called for under the ESA. These measures are part of the biological opinions issued in November 2004 by the NOAA Fisheries and in 2000 by the USFWS to address the effects of the operation of the FCRPS on threatened and endangered salmon and steelhead and ESA-listed Kootenai River – white sturgeon and bull trout. The biological opinions require the FCRPS Action Agencies to implement actions in the Columbia River Basin that address impacts on the Federal hydrosystem on ESA-listed fish to ensure that operation of the FCRPS does not jeopardize the continued existence of listed species or adversely modify their designated critical habitat. The NOAA 2000 Biological Opinion on the FCRPS was challenged in Federal District Court and found to be legally invalid. The Court remanded it to NOAA to issue an opinion consistent with the Court's holdings. The revised opinion was issued on November 30, 2004 (NOAA Fisheries 2004 Biological Opinion). In February 2005, the FCRPS Action Agencies will publish an implementation plan for their proposed action addressed in the NOAA Fisheries 2004 Biological Opinion. The Implementation Plan, together with projects undertaken to address mitigation for non-listed species under the Northwest Power Act, and those to address requirements of the USFWS 2000 Biological Opinion form the basis for Bonneville's planned capital investment of \$36 million for FYs 2005 and 2006.

Bonneville's fish and wildlife capital program is directed at activities that increase numbers of Columbia River Basin fish and wildlife resources including projects designed to increase juvenile and adult fish passage in tributaries and at mainstream dams, and increase fish production and survival through construction of hatchery and acclimation facilities, and fish monitoring facilities. Capital project funding will focus on integrating ESA-related priorities with the Council's Fish and Wildlife Program.

The FY 1997 Energy and Water Appropriations Act added section 4(h)(10)(D) to the Northwest Power Act, directing the Council to appoint an Independent Scientific Review Panel "to review projects proposed to be funded through that portion of Bonneville's fish and wildlife budget that implements the Planning Council's fish and wildlife program." And, "... in making its recommendations to Bonneville, the Planning Council shall consider the impact of ocean conditions on fish and wildlife populations; and shall determine whether the projects employ cost effective measures to achieve program objectives." The Conference Report on the FY 1999 Energy and Water Development Appropriations Act included a new assignment for the Independent Scientific Review Panel (ISRP) and the Council. The ISRP was to review the fish and wildlife projects,

programs, or measures included in Federal agency budgets that are reimbursed and/or directly funded by Bonneville and to make funding recommendations to Congress. The ISRP was directed to determine whether the proposals are consistent with the scientific criteria in the Northwest Power Act as amended in 1996, and provide a report to the Council by April 1 of each year. The Council, in turn, must report to Congress annually by May 15.

Consistent with the principles of the Federal Caucus' *Final Basin wide Salmon Recovery Strategy* (All-H Strategy), Bonneville is implementing much of the off site mitigation actions required by the FCRPS Biological Opinions through the Council's Fish and Wildlife Program. Under the 1980 Northwest Power Act, the Fish and Wildlife Program is tasked with protecting, mitigating and enhancing Columbia River Basin fish and wildlife affected by the development and operation of the FCRPS. The Council's Fish and Wildlife Program provides the mechanism for integrating activities focused on ESA-listed fish stocks in the NOAA Fisheries 2004 and USFWS 2000 Biological Opinions for the FCRPS with those for non-listed species affected by the Columbia Basin's federal and non-federal hydrosystems. Recently completed Sub-basin Plans that include prioritized strategies for mitigation actions will serve as the template for project selection that meet both BPA's ESA and Power Act responsibilities. Additionally, discussion of a minimum cost-sharing requirement for fish and wildlife projects funded by BPA in 2007 and beyond is occurring in currently ongoing long-term funding discussions with the Council and the regional fish and wildlife managers and Tribes.

When acquiring resources to meet planned future loads, the Northwest Power Act requires the Administrator to first consider and acquire resources through cost-effective conservation that the Administrator determines is consistent with the Northwest Power and Conservation Council's Power Plan to reduce loads. The Council's most recent Power Plan, finalized in January 2005, defines conservation as the more efficient use of electricity and recommends that the region develop 700 aMW of conservation over the next 5-years. Bonneville's share of the conservation target is 40 percent or 280 aMW. Bonneville anticipates that between 100 and 200 aMW of this amount will be acquired under its capital conservation acquisition program.

Conservation was key to the recent effort to reduce Bonneville's power delivery obligations as a way of limiting the impact of volatile and high market prices on Bonneville's rates. Conservation is an important part of Bonneville's diverse portfolio of resources that provides a reliable approach to meeting Bonneville's load obligations.

Long-term investments in energy efficiency help buffer the FCRPS against future resource uncertainties. During periods of price volatility, conservation also helps reduce financial risk associated with relying on the market for energy purchases in the future.

Detailed Justification

(dollars in thousands)

FY 2004	FY 2005	FY 2006
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Associated Project Costs. 111,319 131,158 119,400

BPA will work with both the Corps and Bureau to reach mutual agreement on those capital improvement projects that need to be budgeted and scheduled, are cost-effective and provide system or site-specific enhancements, increase system reliability, or provide generation efficiencies.

The work is focused on improving the reliability of the FCRPS, increasing its generation efficiency through turbine runner replacements and optimization of hydro facility operation, and small capital reimbursements associated with routine maintenance activities. Also, limited investments may be made in joint use facilities that are beneficial to both the FCRPS operations and to other Corps and Bureau purposes.

■ **Corps of Engineers (known projects to date):**

FY 2004: Completed work on Power System Reliability Improvements on Lower Columbia River projects and continued work on Lower Snake River projects and other selected sites. Continued refurbishment/replacement of head gates, the gantry crane and bridge crane at Bonneville Dam. Completed repair work of the fish unit generator. Continued exciter installation at Bonneville. Began rehabilitation work at Bonneville. Continued main unit and station service breaker replacements at selected projects. Continued work on oil/water separators at Lower Snake River projects. Completed work on replacing main unit annunciation and CO2 system at Chief Joseph. Continued station service transformer replacement at Chief Joseph. Completed replacement of DC power supplies at John Day and The Dalles. Continued solicitation for a new prototype turbine runner for McNary. Continued hydro optimization investigations system wide. Tested prototype replacement governors at Albeni Falls. Completed implementation of Cougar modernization. Continued exciter replacements at John Day and Willamette Valley projects. Began exciter replacements at Libby. Completed battery system upgrade at McNary. Began rehabilitation work at The Dalles. Began design, solicitation and purchase of spare or replacement transformers for several projects. Continued replacement and upgrades on protective relays and fire protection at Lower Snake River projects, plus a variety of smaller continuing or new investments and repairs for failed units.

FY 2004	FY 2005	FY 2006
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FY 2005: Complete work on Power System Reliability Improvements on Lower Snake River projects and continue work at other selected sites. Continue main unit and station service breaker replacements at selected projects. Continue work on oil/water separators at most projects. Continue hydro optimization investigations and equipment installations systemwide. Continue work on governor replacements at selected projects. Continue refurbishment/replacement of head gates and bridge crane, and complete replacement of gantry crane at Bonneville Dam. Continue rewedging at Bonneville. Complete exciter installation at Bonneville. Continue rehabilitation work at Bonneville. Begin HVAC upgrade at Bonneville. Continue turbine runner replacement and modernization at McNary. Complete exciter replacements at John Day and Willamette Valley projects. Continue exciter replacements at Libby. Continue CO2 system replacement at Chief Joseph. Complete station service transformer replacement at Chief Joseph. Continue turbine replacements at Chief Joseph. Begin crane rehabilitation at Ice Harbor. Complete purchase of replacement generator winding for Lower Granite and Detroit. Continue replacement of exciters at Lower Monumental and Lower Granite. Complete head gate rehabilitation at Ice Harbor. Complete or continue replacement and upgrades on protective relays and fire protection at Lower Snake River projects. Complete heat pump replacements at Little Goose. Continue solicitation and purchase of spare or replacement transformers for several projects. Continue intake crane rehabilitation and station service improvements at The Dalles. Continue rehabilitation work at The Dalles, plus a variety of smaller continuing or new investments and repairs to failed units.

FY 2006: Continue work on Power System Reliability Improvements at selected projects. Continue main unit and station service breaker replacements at selected projects. Continue work on oil/water separators at most projects. Continue hydro optimization investigations and equipment installations systemwide. Continue work on governor replacements at selected projects. Continue refurbishment/replacement of head gates and bridge crane at Bonneville Dam. Complete rewedging at Bonneville. Continue rehabilitation work at Bonneville. Continue HVAC upgrade at Bonneville. Continue turbine runner replacement and modernization at McNary. Continue exciter replacements at Libby. Complete CO2 system installation at Chief Joseph. Begin work on the 480-volt distribution system and supervisory control consoles replacements at Chief Joseph. Continue turbine replacements at Chief Joseph. Continue replacement of exciters at Lower Monumental and Lower Granite. Finish replacement and upgrades on protective relays and fire protection at Lower Snake River projects. Begin head gate rehabilitation at McNary. Continue solicitation and purchase of spare or replacement transformers for several projects. Continue intake crane rehabilitation and station service improvements at The Dalles. Continue rehabilitation work at The Dalles, plus a variety of smaller continuing or new investments and repairs to failed units.

FY 2004	FY 2005	FY 2006
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Bureau of Reclamation (known projects to date):

FY 2004: Continued Grand Coulee runner replacements. Completed Grand Coulee repairs associated with station service fire and finish generator rewind of unit #4. Completed elevator rehabilitation at Grand Coulee. Continued or completed breaker replacement at Grand Coulee and other projects. Continued air housing cooler replacement at Grand Coulee. Continued modifications to Grand Coulee Arrival Center. Continued with replacement of air compressors at Grand Coulee. Purchased spare winding for Grand Coulee. Continued hydro optimization investigations and equipment installations at Grand Coulee. Began SCADA replacement at Grand Coulee and Hungry Horse. Continued life-safety modifications at Hungry Horse and completed life-safety modifications at Anderson Ranch. Completed Boise Diversion modernization. Completed unit breaker replacements at Palisades. Continued transformer replacement at Green Springs and begin replacement at Roza, plus a variety of smaller continuing or new investments and repairs to failed units.

FY 2005: Continue Grand Coulee runner replacements. Complete main unit breaker replacement at Grand Coulee. Continue air housing cooler replacement at Grand Coulee. Continue modifications to Grand Coulee Arrival Center. Continued other breaker and switchgear replacements at Grand Coulee. Continue replacement of air compressors at Grand Coulee. Purchase another spare winding for Grand Coulee. Continue hydro optimization investigations and equipment installations at Grand Coulee. Continue SCADA replacement at Grand Coulee and Hungry Horse. Continue life-safety modifications at Hungry Horse. Continue transformer replacements at Green Springs and Roza. Start seal ring replacement at Chandler, plus a variety of smaller continuing or new investments and repairs to failed units.

FY 2006: Continue Grand Coulee runner replacements. Complete air housing cooler replacement at Grand Coulee. Complete modifications to Grand Coulee Arrival Center. Continue other breaker and switchgear replacements at Grand Coulee. Complete replacement of air compressors at Grand Coulee. Continue hydro optimization investigations and equipment installations at Grand Coulee. Continue SCADA replacement at Grand Coulee and Hungry Horse. Start replacement of breakers at Hungry Horse. Complete life-safety modifications at Hungry Horse. Complete transformer replacements at Green Springs and Roza. Continue seal ring replacement at Chandler, plus a variety of smaller continuing or new investments and repairs to failed units.

Fish and Wildlife.	8,514	36,000	36,000
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Although the Sub-basin planning effort resulting in projects to be recommended for funding in FY 2006 is not complete, and is not expected to be completed until sometime in FY 2005, the following projects may be candidates for capital funding in FY 2006. It is Bonneville's intention to proceed with design and construction of those projects from this list that are recommended for funding within the available budget. The costs indicated are preliminary estimates only and actual costs may be greater or lower than those estimates, depending on final design and construction costs.

FY 2004	FY 2005	FY 2006
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FY 2004-2005 efforts include continued implementation of high priority ESA-related projects and activities associated with the NOAA Fisheries 2004 and USFWS 2000 Biological Opinions. Implementation of reforms to hatchery programs may also be warranted as information on the types of changes to these facilities are established and priorities for sequencing implementation are developed through the Council's Artificial Production Review Committee. Projects that implement the NOAA Fisheries 2004 and USFWS 2000 Biological Opinions are also described in the FCRPS Action Agencies' Implementation Plans. Bonneville may include capitalization of investment in land acquisition for fish and wildlife provided such costs exceed \$1 million and such investment provides a creditable and quantifiable benefit against a defined obligation for Bonneville.

Anadromous fish supplementation, production, and/or juvenile and adult passage improvement projects that may require capital funds in FY 2006 include the following:

- Yakima River Spring Chinook Supplementation Facility, located in Cle Elum, Washington: This project includes the construction of an interpretive building for public education and for the design and construction of a monitoring and evaluation building at Nelson Springs for use by project biologists.
- Johnson Creek Summer Chinook Salmon restoration, located in the South Fork Salmon Basin of Idaho: This project may include development and construction of facilities for adult collection and holding, juvenile rearing, and acclimation. The design and construction is expected to continue.
- Upper Snake River Spring Chinook Salmon captive broodstock acclimation and adult collection facilities (known as the Northeast Oregon Hatchery or NEOH), to be located on the Upper Grande Ronde River near La Grande, Oregon, on Catherine Creek near Union, Oregon, and on Lostine River near Enterprise, Oregon: The design and construction is expected to continue. This project, as a measure in the Council's Fish & Wildlife Program, would also identify and develop artificial propagation facilities to protect and enhance salmon and steelhead native to the Imnaha and Walla Walla River Basins.
- Salmon Creek restoration and enhancement of anadromous fish populations and habitat in Salmon Creek: This project would provide instream flows through on-farm water conservation and water leasing, design of a river pump station, an upgrade to the Salmon Lake Feeder Canal, and design for channel restoration. A hatchery feasibility study for supplementation of currently listed salmon and steelhead populations under the ESA is under discussion with the Bureau and may be appropriate for Bonneville funding, with construction potentially funded by the Bureau.

FY 2004	FY 2005	FY 2006
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- Walla Walla River Juvenile and Adult Passage Improvements: This project would provide safe passage for migrating juvenile and adult salmonids in the Walla Walla Basin by constructing and maintaining passage facilities at irrigation diversion dams and canals.
- Walla Walla Hatchery planning and design work.
- Grand Coulee and Chief Joseph Wildlife Habitat Acquisition
- Couer d'Alene Fish and Wildlife Habitat Acquisition
- Albeni Falls Wildlife Mitigation.
- Blue Creek Winter Range Wildlife Habitat Acquisition
- Yakima Valley Fish and Wildlife Habitat Acquisition
- Grande Ronde Wildlife Habitat Acquisition
- Salmon River Fish Habitat Acquisition
- Fish and Wildlife Land Acquisition - Selah Gap to Union Gap.

Conservation and Energy Efficiency. 16,973 32,500 29,000

The Conservation Augmentation (ConAug) program offers several ways for customers to participate in regional conservation. ConAug program components include: (1) utility standard offer and custom programs, which include the request for Interest in Reducing Load Through Conservation (IRLC), which resulted in customer proposals to conserve energy through residential weatherization, commercial lighting and HVAC (High Voltage Direct Current), industrial processes and lighting, and irrigated agriculture; (2) third party delivery programs, such as residential compact fluorescent lighting, "Vending MiSer" (a program to reduce energy use in regional refrigerated vending machines) and the Water and Waste Water Treatment Facilities program; (3) Federal programs to help Federal installations in the region reduce energy use, which includes the Federal Hatcheries program and work at various dams to help the Corps and the Bureau in their efforts to reduce energy use; and (4) other initiatives still in the design stage.

Total Power Business Line – Capital	136,806	199,658	184,400
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FY 2004	FY 2005	FY 2006
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Explanation of Funding Changes

FY 2006 vs. FY 2005 (\$000)

Associated Project Costs

- Decrease is a reshaping of funding requirements based on the need to maintain a minimum level of generation each year. The reshaping provides a modest increase in investment in FY 2005. The increase would provide additional flexibility for unanticipated outages or repairs in these two years.

-11,758

Fish and Wildlife

No change 0

Conservation and Energy Efficiency

- BPA has been working with its delivery partners to reduce its conservation costs.

-3,500

Total Funding Change, Power Business Line - Capital	-15,258
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